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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KANE, CORDELIA P	

ART UNIT	PAPER NUMBER
2132	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/823,067	SILVESTER ET AL.	
	Examiner	Art Unit	
	Cordelia Kane	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-19,28 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-19,28 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed October 22, 2007 have been fully considered but they are not persuasive. With regards to claim 1, Gennaro teaches all the limitations of the newly amended claim. Applicant argues that Gennaro fails to teach where Z is larger than N. However, it is only claimed that N is less than or equal to Z.

2. With regards to claims 7, 14 and 28, Gennaro does teach that N is less than Z. The challenge questions that are selected to be asked at authentication are less than the number of questions asked at enrollment (column 9, lines 14-16). So N different types of data (questions) are used to authenticate a user, where N is less than Z.

3. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

4. With regards to the combination of references Gennaro and Nakagawa, both Nakagawa and Gennaro are from the same field of endeavor, authentication. Therefor the combination was proper.

5. With regards to the combination of references Gennaro and Harris, both Harris and Gennaro are from the same field of endeavor, encryption. Therefor the combination was proper.

Claim Objections

6. Claim 7 objected to because of the following informalities: From the applicants remarks, and previous claims it appears that the variables Z and N were confused. According to claim 1, the first authentication factors are of Z types and the second are of N, and N is less than Z. Claim 7 contradicts what is in the preceding claims. For the purposes of examination, it is assumed that the first authentication factors are more than the second authentication factors. Appropriate correction is required.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

8. Claims 1, 2, 7, 8, 10, 14 – 18, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosario Gennaro et al's US Patent 6,317,834 B1. Referring to claim 1, Gennaro teaches:

a. Receiving Z first multi-factor authentication data of Z types (column 9, lines 1-6).

b. Encrypting the first multi-factor authentication data (column 9, lines 33-35).

c. Storing the encrypted first multi-factor authentication data (figure 7A, #769).

d. Determining if the second received multi-factor authentication data matches a subset of the first multi-factor authentication data of N types (column 10, lines 16-19) a user being authenticated if the second authentication data matches the subset of the first authentication data (column 10, lines 23-25).

9. Referring to claim 2, Gennaro teaches that one of the inputs is a biometric sample (column 9, lines 2-3).

10. Referring to claim 7, Gennaro teaches:

e. That the resource being accessed is a database (column 1, lines 60-61). It is inherent that the system would be a computer and therefor have a processor, non-volatile memory, and a bus.

f. Receiving first user authentication data of Z types(column 9, lines 1-6).

g. Storing the encrypted first user authentication data (figure 7A, #769).

h. Determining if the second received user authentication data matches a subset of the first user authentication data (column 10, lines 16-19) the second user authentication data including authentication data of N types where N is less than Z (column 10, lines 16-19). The users biometric is used to confirm the identity of the user, but also an identifier (column 9, lines 56-58) is provided and answers to challenge questions (column 9, line 64-column 10, line 4). The number of challenge questions asked is less than the number provided at enrollment (column 9, lines 14-16).

11. Referring to claim 8, Gennaro teaches encrypting the first multi-factor authentication data (column 9, lines 33-35).

12. Referring to claim 10, Gennaro teaches that one of the inputs is a biometric sample (column 9, lines 2-3).

13. Referring to claim 14, Gennaro teaches:

i. Receiving first multi-factor authentication data including a personal identifier (column 9, line 58), challenge answers (column 9, lines 64-67), and a biometric sample (column 10, lines 15-16).

j. Decrypting the second multi-factor authentication data (column 3, lines 14-16) including Z types of authentication data where N is less than Z (column 9, lines 14-16). There are more challenge answers stored than are used for authentication.

k. Determining if the first multi-factor authentication data matches a subset of the second multi-factor authentication data (column 10, lines 16-19).

14. Referring to claim 15, Gennaro teaches:

l. Granting access to the resource if the first multi-factor authentication data matches the subset of the second multi-factor authentication data (column 10, lines 23-25).

m. Denying access if the first multi-factor authentication data does not match the second multi-factor authentication data.

15. Referring to claim 16, Gennaro teaches requesting the first multi-factor authentication data in response to an attempt to access the resource (column 1, lines 58-61).

16. Referring to claim 17, Gennaro teaches that the first multi-factor authentication data includes a biometric sample (column 10, lines 15-16).

17. Referring to claim 18, Gennaro teaches:

n. Receiving second multi-factor authentication data (column 9, lines 1-6).

o. Encrypting the second multi-factor authentication data (column 9, lines 33-35).

p. Storing the second multi-factor authentication data (Figure 7A, #769).

18. Referring to claim 28, Gennaro teaches:

q. Requesting autonomous user authentication sub-system to perform user authentication (column 9, lines 56-57).

r. Requesting a user to provide first multi-factor authentication data including a personal identifier (column 9, line 58), challenge answers (column 9, lines 64-67), and a biometric sample (column 10, lines 15-16).

s. Determining whether to grant access to the resource based on whether the first multi-factor authentication data matches a subset of second multi-factor authentication data (column 10, lines 15-25) where the second multi-factor authentication data is encrypted and stored (Figure 7A, #769) the second multifactor authentication data including Z types of authentication data where N is

less than Z (column 9, lines 14-16). There are more challenge questions and answers in enrollment than are provided for authentication.

19. Referring to claim 29, Gennaro teaches that the first multi-factor authentication data includes a biometric sample (column 10, lines 15-16).

Claim Rejections - 35 USC § 103

20. Claims 4, 6, 12, 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gennaro and further in view of Katsuya Nakagawa's US Patent 5,070,479.

21. Gennaro discloses all the limitations of the parent claim. Gennaro does not appear to explicitly disclose the processor being a microprocessor, or the two non-volatile memories being separated. However, Nakagawa discloses:

t. That the processor is a microprocessor (column 4, 32-33). (claim 4)

u. That there is a second processing unit separate from the first processing unit for performing authentication (column 15, lines 42-45). (claims 6 and 19)

v. That the second non-volatile memory is physically separated from the first non-volatile memory (column 1, lines 20-24). (claim 12)

w. It is inherent that if the second non-volatile memory is physically separated from the first non-volatile memory that it is also logically separated. (claim 13)

22. Gennaro and Kanagawa are analogous art because they are from the same field of endeavor authentication. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Gennaro and Kanagawa before

him or her, to modify Gennaro to include the microprocessor, and separate memories and processing of Kanagawa. The motivation for doing so would have been because a microprocessor is well known in the art, and that having separate memory and processing for authentication creates a more secure computing environment.

23. Claims 3, 5 and 9 are rejected under 35 USC 103 (a) as being obvious over Gennaro in view of Walter Harris et al's US Patent 7,000,829 B1. Gennaro discloses all the limitations of the parent claim. Gennaro does not appear to explicitly disclose using the Trusted Platform Module or protected execution. However, Harris discloses:

x. Using a Trusted Platform Module, and including the cryptographic engine (column 9, line 66 – column 10, line 4). (claims 3 and 9)

y. Utilizing one of the specifications that provide protected execution (column 10, lines 10-11). (claim 5)

24. Gennaro and Harris are analogous art because they are from the same field of endeavor, cryptography. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Gennaro and Harris before him or her, to modify Gennaro to include the Trusted Platform Module that provides protected execution of Harris. The motivation for doing so would have been that it provides a more secure and trusted computing platform (column 10, lines 10-11). Therefor it would have been obvious to combine Harris with Gennaro to obtain the invention as specified in the instant claims.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cordelia Kane whose telephone number is 571-272-7771. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CK

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